

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference ASW1721	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB2005/000389	International filing date (day/month/year) 04.02.2005	Priority date (day/month/year) 06.02.2004	
International Patent Classification (IPC) or national classification and IPC INV. C11B9/00 C11C5/00			
Applicant RUFF, Brendan			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 7 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 05.09.2005		Date of completion of this report 11.04.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer Rooney, K Telephone No. +31 70 340-3931	



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/GB2005/000389

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1, 2, 5-26	as originally filed
3, 4	received on 05.12.2005 with letter of 05.12.2005

Claims, Numbers

1-29	received on 05.12.2005 with letter of 05.12.2005
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Drawings, Sheets

1/3-3/3	as originally filed
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☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 32, 33

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 32,33 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos.

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☒ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2005/000389

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-26
	No: Claims	27-29
Inventive step (IS)	Yes: Claims	
	No: Claims	1-29
Industrial applicability (IA)	Yes: Claims	1-29
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

- D1: US-A-4 427 366 (MOORE ET AL) 24 January 1984 (1984-01-24)
- D2: PATENT ABSTRACTS OF JAPAN vol. 2002, no. 03, 3 April 2002 (2002-04-03) &
JP 2001 327588 A (GREEN PRECIOUS:KK), 27 November 2001 (2001-11-27)
- D3: US-A-4 614 625 (WILSON ET AL) 30 September 1986 (1986-09-30)
- D4: DE 199 56 226 A1 (HAARMANN & REIMER GMBH) 31 May 2001 (2001-05-31)
- D5: EP-A-0 787 788 (CHENG, JACKIE CHAK YIN) 6 August 1997 (1997-08-06)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 27 is not new in the sense of Article 33(2) PCT.

The document D1 discloses odorising chips which are formed by a mixture of meltable material such as paraffin wax and a scent. The chips are added about the body of the candles which in operation will have a melt-pool distributed around it and thereby release their scent (see D1: the whole document).

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D3 discloses scented waxy pellet. The pellets may be coated and the coat may contain a colorant (see D3: as cited in search report). It seems the subject-matter of claim 1 is merely a selection of features which already exist in the state of the art, where the advantages of these features are readily apparent and to which no unexpected effect is associated.

4. Dependent claims

4.1 The present application does not meet the criteria of Article 33(1) PCT, because the

subject-matter of claims 28 and 29 is not new in the sense of Article 33(2) PCT.

The document D1 implicitly discloses melting of fragrance pellets wherein convection occurs to facilitate scent release (see D1: the whole document), thereby removing novelty from the subject-matter of claims 28 and 29.

4.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 2-26 is not inventive in the sense of Article 33(3) PCT

Where these claims do not relate to product-by-process type reasoning and results to be achieved, the subject-matter of these claims does not appear to involve an inventive step since there is no teaching in the description that the selected features are connected with any particular technical effect. Therefore these claims are considered as alternative presentations of the scented pellets and thus fall within the normal capabilities of the skilled person (see D1-D5: as cite in the search report).

concentration, for instance of fragrance oils and perfumes, the lower the flash point of the candle wax. In very high scent concentrations the candle risks flash ignition of the melt pool.

5 Accordingly the present invention provides a scented pellet for introducing scent to a candle comprising a bulk material, scent and a coating, wherein the concentration of scent in the coating is less than the concentration of scent in the bulk material and wherein the pellet is arranged to release the scent upon melting of the bulk material in the
10 candle's melt pool surrounding the wick.

The bulk material of the pellet may comprise one of or a mixture of synthetic wax and organic wax. For example, the wax may be beeswax, paraffin wax, or any other suitable plant or biological wax.

15

The concentration of the scented material is preferably higher than that of typical scented candles. The concentration of the scented material is preferably at least 3%, more preferably at least 5% and still more preferably approximately 10%. In some circumstances higher
20 concentrations may be possible, for example up to 15% or above, or up to 20% or above. It may also be possible to use concentrations as high as 50% or more, or even pure scent. This percentage may be the percentage volume of scent in the bulk material or alternatively may be the percentage volume in the whole pellet.

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The scented material may comprise a perfume or alternatively may comprise fragrant oil. Any suitable synthetic scent or scent of biological origin may be used, for example, aromatic oils. Though these scents may normally be in pure form liquid at room temperature, scented material in
30 solid form may also be added to the pellet, for instance as a powder, and

this scent may melt at temperatures found typically in the molten wax in the candle melt pool.

The mixture of bulk material and scented material may preferably be a solid. Alternatively, the mixture may be a non-solid amorphous material such as a paste or may comprise gaseous pockets to form a solid foam. A foamed pellet has the advantage of rapid melting and therefore results in more rapid production of scent by the candle. The maximum concentration of scent in pellets in which the mixture of bulk material and scented material is a solid is determined by the concentration at which the mixture at room temperature becomes non-solid.

Alternatively, the pellet may comprise a liquid scent core within a solid bulk material capsule or shell.

15

The coating may be made from any suitable hard combustible material such as wax. For example, paraffin wax or beeswax may be used. Either one of, or both of the bulk material of the pellet and the coating may contain a colourant such as a coloured dye or pigment. For example, different colours may be used for different fragrances. In this way a set of pellets may be provided the pellets having different colourants, and different scents, each pellet of a particular colourant having a corresponding scent. This enables the scent of the pellet to be determined by its colour. The colourant may be contained only in the coating, or the coating may contain more colourant than the main body of the pellet. In some circumstances, the colourant may be a dye that oxidises upon melting of the pellet so as to minimise the amount of colour added to the melt pool of the wax.

30 The coating may contain less scent than the main body of the pellet, preferably substantially no scent. The coating may also be less permeable

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than the main body of the pellet, thereby being arranged to prevent scent from the main body of the pellet from escaping, until the pellet melts.

CLAIMS

1. A scented pellet arranged to be added to the melt pool of a candle
5 for introducing scent to the candle comprising a bulk material, a scent,
and a coating, wherein the concentration of scent in the coating is less
than the concentration of scent in the bulk material, and wherein the
pellet is arranged to release the scent upon melting of the bulk material.
- 10 2. A pellet according to claim 1, wherein the bulk material comprises
a wax.
3. A pellet according to claim 1 or claim 2, wherein the volume
concentration of scent in the pellet is at least 3%.
- 15 4. A pellet according to claim 3, wherein the volume concentration of
scent is at least 5%.
5. A pellet according to claim 3 or claim 4, wherein the volume
20 concentration of scent is at least 10%.
6. A pellet according to any of claims 3 to 5, wherein the volume
concentration of scent is at least 50%.
- 25 7. A pellet according to any preceding claim, wherein the scent is a
perfume.
8. A pellet according to any of claims 1 to 6, wherein the scent is
fragrant oil.

9. A pellet according to any preceding claim, wherein the bulk material and scent are mixed to form a solid at room temperature.

10. A pellet according to any of claims 1 to 8, wherein the bulk material and scent are mixed to form a paste at room temperature.

11. A pellet according to any of claims 1 to 9, wherein a mixture of bulk material and scent comprises foamed solid material at room temperature.

10

12. A pellet according to any of claims 1 to 8, wherein the pellet comprises a liquid scent core within a solid bulk material.

13. A pellet according to any preceding claim, wherein the bulk material contains a colourant.

14. A pellet according to any preceding claim, wherein the coating is made from wax.

15. A pellet according to any preceding claim, wherein the coating contains no scent.

16. A pellet according to any preceding claim, wherein the coating contains a colourant.

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17. A pellet according to any preceding claim, wherein the diameter of the pellet is between 2mm and 30mm.

18. A pellet according to claim 17, wherein the diameter of the pellet is between 3mm and 20mm.

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19. A pellet according to any preceding claim, wherein the pellet comprises any one of a sphere, cylinder, cube, tear-drop, disc, horse-shoe, cigar shape or any other suitable ergonomic shape.
- 5 20. A pellet according to any preceding claim, wherein the pellet is shaped such that the wick of a candle can pass inside its outer bounding perimeter.
21. A pellet according to any preceding claim, wherein the melting
10 temperature of the bulk material is in the range of 40°C to 90°C.
22. A pellet according to any preceding claim, wherein the melting temperature of the bulk material is in the range of 55°C to 90°C.
- 15 23. A pellet according to any preceding claim, wherein the outer surface of the pellet is treated to reduce the porosity of the pellet.
24. A pellet according to any preceding claim, wherein the outer
20 surface of the pellet is treated to increase the mechanical strength of the pellet.
25. A pellet according to any preceding claim, wherein the bulk material further comprises additives to increase the uptake of scent.
- 25 26. A pellet according to any preceding claim, wherein the bulk material further comprises additives to increase the hardness of the bulk material.
27. A method of introducing scent to a candle, the method comprising
30 the step of adding one or more scented pellets to the melt pool formed around the wick of a lit candle.

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28. A method according to claim 27, further comprising the step of allowing the one or more pellets to melt in the melt pool of the candle, facilitating release of the scent.

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29. A method according to claim 28, wherein scent is released by the motion of convection currents established in the melt pool of the candle.

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